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MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			EXAMINER PANI, JOHN	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/576,962

Applicant(s)

PANELLA ET AL.

Examiner

John Pani

Art Unit

3736

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4/24/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1-7, 13-15, 17, 22-24 and 27 are objected to because of the following informalities:

In reference to Claim 1

In line 4 it is suggested to replace "the torso" with --a torso--. In line 6 it is suggested to replace "the corresponding" with --corresponding--.

In reference to Claim 2

In line 2 it is suggested to replace "the beginning and at the end" with --a beginning and at an end--.

In reference to Claim 3

In lines 1-2 it is suggested to replace "the transmission" with --transmission--.

In reference to Claim 4

In line 2 it is suggested to replace "the seat" with --a seat--. In line 3 it is suggested to replace "the torso" with --a torso--. In line 4 it is suggested to replace "the beginning" with --a beginning--. In line 5 it is suggested to replace "the signals" with --signals--.

In reference to Claim 5

In lines 1-2 it is suggested to replace "the transmission" with --transmission--.

In reference to Claim 6

In line 2 it is suggested to replace "the seat" with --a seat--. In line 3 it is suggested to replace "the torso" with --a torso--. In line 4 it is suggested to replace "the

signals" with --signals--. In line 5 it is suggested to replace "the corresponding" with --corresponding--. In line 6 it is suggested to replace "the transmission" with --transmission--.

In reference to Claim 7

In line 2 it is suggested to replace "the acquisition" with --acquisition--.

In reference to Claims 9 and 16

It is suggested to replace all instances of "is of the type" with --is an--or --is a--as appropriate, in order to clarify whether the claims are positively requiring these exact part numbers, if that is the case.

In reference to Claims 13-15

In line 3 it is suggested to replace "the anterior-posterior" with --an anterior-posterior--. In line 4 it is suggested to replace "the mediolateral" with --a mediolateral--.

In reference to Claim 17

In line 3 it is suggested to replace "the respective" with --respective--.

In reference to Claim 22

In line 2 it is suggested to replace "the electronic signals" with --the signals--.

In reference to Claim 23

In line 3 it is suggested to replace "the beginning" with --a beginning--, and to replace "the end" with --an end--.

In reference to Claim 24

In line 5 it is suggested to replace "the torso" with --a torso--. In line 7 it is suggested to replace "the pre-established" with --pre-established--. In line 9 it is suggested to replace "the signals" with --signals--.

In reference to Claim 27

In line 4 it is suggested to replace "the digital" with --digital--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-3, 7-10, 13, 16-19, 21, 23-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In reference to Claims 1-3, 7-10, 13, 16-19, and 23

Line 5 of claim 1 refers to "said at least one pressure sensor". It is unclear whether the reference is to the "at least one pressure sensor" on the seat, to "the at least one pressure sensor" in the armrests, or "the at least one pressure sensor" in both cases, thereby rendering the claim indefinite.

In reference to Claims 3 and 22

Claim 3 recites the limitation "said optical detectors" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

In reference to Claims 7 and 21

In line 2, the references to "enabling/disabling" and "enable/disable" render the claim indefinite, as it is unclear whether the device is required to both enable *and* disable or merely one of the two.

In reference to Claims 8 and 9

Lines 1-2 refer to "said at least one pressure sensor". It is unclear whether the reference is to the "at least one pressure sensor" on the seat, to "the at least one pressure sensor" in the armrests, or "the at least one pressure sensor" in both cases, thereby rendering the claim indefinite.

In reference to Claims 23 and 24-28

The phrase "possibly" in claims 23 and 24 renders the claims indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

In reference to Claims 24-28

Line 8 and line 11 refer to "said at least one pressure sensor". It is unclear whether the reference is to the "at least one pressure sensor" on the seat, to "the at least one pressure sensor" in the armrests, or "the at least one pressure sensor" in both cases, thereby rendering the claim indefinite.

In reference to Claim 25

Lines 2-3 refer to detecting "passing respectively between said pressure sensors, said means and said at least one pair of optical sensors". It is unclear whether the limitations require detecting something actually passing between the pressure sensors and said means in addition to the optical sensors, or if instead the language was

intended to refer to detecting something passing only between said pair of optical sensors.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 7, 10, 13, 16-19, 21, and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Measurement on Tinetti test: Instrumentation and procedures" to Lombardi et al. ("Lombardi") in view of GB 2 357 848 to Westhead et al. ("Westhead").

In reference to Claim 1

Lombardi teaches a motor function test system comprising a chair for a motor function test comprising a seat endowed with at least one pressure sensor ("pressure sensors", see pg. 406) and means suitable for detecting inclinations of the torso of a subject ("inclinometers", pg. 404), an electronic data processor ("PC") to receive signals emitted by said at least one pressure sensor and from said means when stimulated and to collect said signals and process the corresponding descriptive parameters (top of pg. 404). However, Lombardi does not teach of armrests each endowed with at least one pressure sensor. Westhead teaches of an apparatus for monitoring balance performance during the transition between sitting and standing positions in which

armrests (handles **20**) are provided for each hand of the patient, and which each include pressure sensors ("load sensor") for measuring the horizontal force used by the patient to pull themselves forward (see pg. 7 line 22 - pg. 8 line 10). It would have been obvious to one having ordinary skill in the art at the time of the invention to have included armrests with pressure sensors in them, as taught by Westhead, with the chair of Lombardi, as this would provide the enhancement of indicating the force the patient is using to pull himself forward while rising from a chair during studies of balance, as explicitly taught by Westhead.

In reference to Claims 7 and 21

Lombardi in view of Westhead teaches the device of claim 1 (see above), and Lombardi further teaches an interface for enabling/disabling the acquisition of said signals towards said electronic data processor ("interface", bottom of pg. 406).

In reference to Claim 10

Lombardi in view of Westhead teaches the device of claim 1 (see above), and Lombardi further teaches said means suitable for detecting inclination of the torso of a subject comprise a pair of inclinometers (bottom of pg. 404).

In reference to Claim 13

Lombardi in view of Westhead teaches the device of claim 10 (see above), and Lombardi further teaches the pair of inclinometers comprise a first inclinometer ("inclinometer A") appointed to measure the inclinations of the torso of a subject in the anterior posterior plane and a second inclinometer ("inclinometer B") appointed to

measure the inclination of the torso of said subject in the mediolateral plane (pg. 405, first paragraph).

In reference to Claim 16

Lombardi in view of Westhead teaches the device of claim 10 (see above), and Lombardi further teaches the pair of inclinometers are Midori Precision PMP-S30TX (pg. 404, last paragraph).

In reference to Claim 17

Lombardi in view of Westhead teaches the device of claim 17 (see above), and Lombardi further teaches said pair of inclinometers are mounted onto a support ("polycarbonate support") constructed in such a manner as to allow the orientation of the respective planes of maximum sensitivity of said inclinometers perpendicularly to one another (pg. 405, first paragraph).

In reference to Claim 18

Lombardi in view of Westhead teaches the device of claim 17 (see above), and Lombardi further teaches that the support comprises an inner plate and a parallel outer plate connected to one another in such a manner as to rotate one with respect to the other around an axis perpendicular to their plane (pg. 405, second paragraph).

In reference to Claim 19

Lombardi in view of Westhead teaches the device of claim 18 (see above), and Lombardi further teaches (see Fig. 1) the inner plate is movably mounted onto an elasticised strap ("belt") through a buttonhole and is engaged with two braces ("elastic

braces") through corresponding buttonholes so that a subject may wear said pair of inclinometers (pg. 405, second paragraph).

In reference to Claim 23

Lombardi in view of Westhead teaches the device of claim 1 (see above), and Lombardi further teaches a button ("foot-switch", pg. 407, section 3.2) connected to said electronic data processor to indicate the beginning and possibly the end of various stages of which the motor function test is composed.

In reference to Claim 24

Lombardi teaches a method for the acquisition and collection of signals and their processing into corresponding parameters for a motor function tests comprising the following stages in sequence: (a) providing a motor function test system (see pgs. 404-406); (b) applying to a subject to be tested the means suitable for detecting inclinations of the torso of said subject (pg. 407 first paragraph); (c) detecting the pre-established movements of such subject by said means and the at least one pressure sensor (pg. 407 sections 3.1 and 3.2); (d) transmitting the signals corresponding to said detection in stage (c) to the electronic data processor (pg. 407 section 3.2); and collecting and processing said signals originating from said means and said pressure sensor to obtain parameters representative of the degrees of ambulation and posture of the subject (see pg. 407-410, section 3.3).

However, Lombardi does not teach of armrests each endowed with at least one pressure sensor included with the motor function test system. Westhead teaches of an apparatus and method for monitoring balance performance during the transition

between sitting and standing positions in which armrests (handles **20**) are provided for each hand of the patient, and which each include pressure sensors ("load sensor") for measuring the horizontal force used by the patient to pull themselves forward (see pg. 7 line 22 - pg. 8 line 10). It would have been obvious to one having ordinary skill in the art at the time of the invention to have included armrests with pressure sensors in them, as taught by Westhead, with the chair of Lombardi, as this would provide the enhancement of indicating the force the patient is using to pull himself forward while rising from a chair during studies of balance, as explicitly taught by Westhead.

In reference to Claim 25

Lombardi in view of Westhead teaches the method according to claim 24 (see above) and Lombardi further teaches the detection stage is achieved by detecting variations in pressure (see Fig. 4) and inclination (see Fig. 3).

In reference to Claim 26

Lombardi in view of Westhead teaches the method according to claim 24 (see above), and Lombardi further teaches that the transmission stage takes place using cable (see pg. 406, second paragraph).

In reference to Claim 27

Lombardi in view of Westhead teaches the method according to claim 24 (see above), and Lombardi further teaches the stage of collection and processing of the signals originating from said pressure sensors and from said means by said electronic data processor comprises the transformation of the signals into digital data from which said parameters are obtained (see pg. 407, section 3.2).

In reference to Claim 28

Lombardi in view of Westhead teaches the method according to claim 24 (see above), and Lombardi further teaches the aforementioned parameters are numerical morphological parameters (see bottom of pg. 408) which may be further processed and combined with the aim of obtaining a single performance index (Nothing about these parameters would prevent this further processing/combining).

6. Claims 2 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lombardi and Westhead as applied to claim 1 above, and further in view of US 2002/0055691 to Tasch et al. ("Tasch").

In reference to Claim 2

Lombardi in view of Westhead teaches the system of claim 1 (see above), but do not disclose a pair of optical detectors placed at the beginning and end of an established route which said subject must encounter. Lombardi further suggests including additional gait analysis in the system (pg. 414, second full paragraph). Tasch teaches a device for measuring gait in animals which uses a plurality of photocells (**160**) placed at the beginning and end of an established route (see Fig. 1a) which the subject must encounter. The photocells are used to measure the animals speed through a course ([0037]). It would have been obvious to one having ordinary skill in the art at the time of the invention to have included a plurality of photocells in a course, as taught by Tasch, in the system of Lombardi in view of Westhead, in order to measure the patient's

speed, as taught by Tasch, and thereby include more gait data in the analysis, as suggested by Lombardi.

In reference to Claim 20

Lombardi in view of Westhead and further in view of Tasch teaches the system of claim 2 (see above), and Tasch further teaches that the pair of optical detectors are represented by two pairs of photocell-reflectors (see [0037]).

7. Claims 3 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lombardi in view of Westhead as applied to claim 1 above, and further in view of US 2003/0181832 to Carnahan et al. ("Carnahan").

In reference to Claims 3 and 22

Lombardi in view of Westhead teaches the system of claim 1 (see above), but do not teach that the transmission of signals is carried out using wireless technology. Carnahan teaches a system for measuring angles in the body in which a sensor is connected to a signal processor via a wireless interface using Blue-tooth communications as an alternative to a wire in order to avoid the use of such conductor (see [0025]). It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified Lombardi by replacing cables with a wireless interface such as Blue-tooth in order to avoid the use of a conductor cable, as taught by Carnahan.

8. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lombardi in view of Westhead as applied to claim 1 above, and further in view of WO 02/090901 to Orlewski ("Orlewski").

9. Please note that US 2004/0183688 to Orlewski is considered an English equivalent and will be referenced herein. See MPEP § 901.05 (d) [R-5].

In reference to Claim 8

Lombardi in view of Westhead teaches the system of claim 1 (see above), but does not teach that the pressure sensor is mounted onto a flexible support. Orlewski teaches a device for detecting passengers in a vehicle in which a pressure sensor is integrated with a seat, and the sensor is mounted on a flexible support layer ("decoupling layer", see [0007]). The decoupling layer decouples the pressure sensor from the material below, and provides a known, constant modulus of elasticity below the pressure sensor, thereby allowing reliable pressure detection over the lifetime of the seat. It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the seat of Lombardi by including a flexible decoupling layer, as taught Orlewski, in order to provide a known constant modulus of elasticity below the pressure sensor, and allowing reliable pressure detection for an extended period of time, as explicitly taught by Orlewski.

In reference to Claim 9

Lombardi in view of Westhead and further in view of Orlewski teaches the system of claim 8 (see above), and Lombardi further teaches that at least one pressure sensor is a thin resistive sensor made with a sensitive film placed between two flexible

polymeric sheets, wherein at least one pressure sensor is of the type Interlink Electronics Europe FSR154 on the seat (see pg. 406). Westhead does not specify the type of sensor used in the handles, but teaches that the sensors can be of any suitable form (pg. 8 lines 23-25). It would have been obvious to one having ordinary skill in the art at the time of the invention to have used any known pressure/load sensor, as taught by Westhead, including an Interlink Electronics Europe FSR648AS, in the armrests, as the selection of a known material for a suitable purpose is obvious (see MPEP § 2144.07).

10. Claims 4, 11, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lombardi in view of Tasch.

In reference to Claim 4

Lombardi teaches a motor function test system comprising a chair for a motor function test endowed with at least one pressure sensor positioned on the seat ("pressure sensors", see pg. 406), means suited to detecting inclinations of the torso of the subject ("inclinometers", pg. 404), an electronic data processor ("PC") to receive signals emitted by said at least one pressure sensor, by said means, and to collect said signals and process the corresponding descriptive parameters (top of pg. 404). However, Lombardi does not teach a pair of optical detectors placed at the beginning and end of an established route.

Tasch teaches a device for measuring gait in animals which uses a plurality of photocells (160) placed at the beginning and end of an established route (see Fig. 1a)

which the subject must encounter. The photocells are used to measure the animals speed through a course ([0037]). It would have been obvious to one having ordinary skill in the art at the time of the invention to have included a plurality of photocells in a course, as taught by Tasch, in the system of Lombardi, in order to measure the patient's speed, as taught by Tasch, and thereby include more gait data in the analysis, as suggested by Lombardi. Both Tasch and Lombardi include computer systems for data processing and it would have been obvious when including the sensors of Tasch in the system of Lombardi, to have connected them to the PC so that walking speed could be automatically calculated, as implied by Tasch.

In reference to Claim 11

Lombardi in view of Tasch teaches the system of claim 4 (see above), and Lombardi further teaches that the means comprise a pair of inclinometers (bottom of pg. 404).

In reference to Claim 14

Lombardi in view of Tasch teaches the device of claim 11 (see above), and Lombardi further teaches the pair of inclinometers comprise a first inclinometer ("inclinometer A") appointed to measure the inclinations of the torso of a subject in the anterior posterior plane and a second inclinometer ("inclinometer B") appointed to measure the inclination of the torso of said subject in the mediolateral plane (pg. 405, first paragraph).

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lombardi in view of Tasch as applied to claim 4 above, and further in view of Carnahan.

In reference to Claim 5

Lombardi in view of Tasch teaches the system of claim 4 (see above), but neither teach using wireless technology for transmission. Carnahan teaches a system for measuring angles in the body in which a sensor is connected to a signal processor via a wireless interface using Blue-tooth communications as an alternative to a wire in order to avoid the use of such conductor (see [0025]). It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified Lombardi by replacing cables with a wireless interface such as Blue-tooth in order to avoid the use of a conductor cable, as taught by Carnahan.

12. Claims 6, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lombardi in view of Carnahan.

In reference to Claim 6

Lombardi teaches a motor function test system comprising a chair for a motor function test comprising a seat endowed with at least one pressure sensor ("pressure sensors", see pg. 406) and means suitable for detecting inclinations of the torso of a subject ("inclinometers", pg. 404); an electronic data processor ("PC") to receive signals emitted by said at least one pressure sensor and from said means when stimulated and to collect said signals and process the corresponding descriptive parameters (top of pg.

404). However, Lombardi does not teach that the transmission of signals is carried out using wireless technology.

Carnahan teaches a system for measuring angles in the body in which a sensor is connected to a signal processor via a wireless interface using Blue-tooth communications as an alternative to a wire in order to avoid the use of such conductor (see [0025]). It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified Lombardi by replacing cables with a wireless interface such as Blue-tooth in order to avoid the use of a conductor cable, as taught by Carnahan.

In reference to Claim 12

Lombardi in view of Carnahan teaches the system of claim 6 (see above), and Lombardi further teaches that the means comprise a pair of inclinometers (bottom of pg. 404).

In reference to Claim 15

Lombardi in view of Carnahan teaches the device of claim 12 (see above), and Lombardi further teaches the pair of inclinometers comprise a first inclinometer ("inclinometer A") appointed to measure the inclinations of the torso of a subject in the anterior posterior plane and a second inclinometer ("inclinometer B") appointed to measure the inclination of the torso of said subject in the mediolateral plane (pg. 405, first paragraph).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Pani whose telephone number is 571-270-1996. The examiner can normally be reached on Monday-Friday 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on 571-272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JP 12/3/07

A handwritten signature in black ink, appearing to read "Max Hindenburg", is located in the bottom right corner of the page.